ITU C&I Programme

Key activities and main ITU outcomes which are related to the implementation of ITU C&I

The Standardization Sector side

❖ Pillar 1: Conformity Assessment

❖ Pillar 2: Interoperability Events

The Development Sector side

❖ Pillar 3: Capacity building

❖ Pillar 4: Establishment of test centres and C&I programmes in developing countries

Authority for Action:
ITU's highest decision making bodies

Resolution 76: ITU World Telecommunication Standardization Assembly (WTSA-12)

Resolution 47: ITU World Telecommunication Development Conference (WTDC-14)

Resolution 177: ITU Plenipotentiary Conference (PP-10)

Resolution 62: Radiocommunication Assembly 2012

Council Decisions: (2009, 2010, 2011, 2012, 2013, 2014)

WTSA-12

WTSA-12 designated the ITU-T Study Group 11 as a lead group on test specifications, conformance and interoperability testing which coordinates ITU-T activities related to the ITU C&I programme across all SGs and review the recommendations in the Conformance and Interoperability Business Plan for the long term implementation of the C&I programme

Council-12
C12/48

- **ITU-T to run a pilot of the conformity assessment programme for key technologies**

- **ITU-T study groups to identify further technologies *(ITU-T Recommendations)* for C&I**

- **ITU Secretariat invite labs/forums/consortia/SDOs to join the C&I Programme**

- **ITU Secretariat to consult study groups towards identifying and suggesting topics for future events**

- **ITU-T Study Groups to develop system roadmaps, identify and define the interfaces across which interoperability is needed**

- **ITU-T Study Groups should identify or develop use cases, application profiles and test plans to use for interoperability testing for Recommendations**

The key outcomes related to Pillar 1&2 as of June 2014 (1/2)

- ✓ ITU-T SG11 developed a **living list of key technologies** suitable for C&I (http://itu.int/go/key-technologies)

- ✓ ITU-T SG11 launched the **list of pilot projects** of conformity assessment (http://www.itu.int/go/pilot-projects)

- ✓ ITU-T SG11 maintains the **C&I reference table of ITU-T Recs.** (http://itu.int/go/reference-table)

- ✓ ITU-T SG11 established the new work item **Q.TL-rec-pro "Testing Laboratories recognition procedure"** (Nov. 13)

- ✓ ITU-T SG11 established the **CG on collaboration between ITU and TL** (Nov. 13)

- ✓ ITU secretariat cooperated with the relevant SDOs (ISO, IECEE, DCMAS, ILAC, IAF, etc.)

The key outcomes related to Pillar 1&2 as of June 2014 (2/2)

- ✓ **ITU conducted test events** (e.g. from 2013 to 2014):
  - ✓ Conformance & Interoperability event of IMS UNI, IPTV (Bangkok, Sept. 13)
  - ✓ Continua Health Alliance Interoperability event on e-health (Geneva, Oct. 13)
  - ✓ Performance assessment of mobile phones in conjunction with HFT in a car against Recs. ITU-T P.1100/P.1110 (May. 14)
  - ✓ Interoperability of IMS-NNI, IoT (Aug. 14) (planned)

- ✓ ITU-T SG11 established the new work item **Q.Int_speed_test "Unified methodology of Internet speed quality measurement usable by end-users on the fixed and mobile networks"**

- ✓ There are available some new test specifications for **IMS-NNI, benchmarking, NGN-UNI**, etc.

- ✓ JCA-CIT extended the list of conformity assessment approaches

ITU-T C&I Portal

http://www.itu.int/en/ITU-T/C-I/Pages/default.aspx

ITU C&I Programme. Key activities and main ITU outcomes which are related to the implementation of ITU C&I Programme

SG11 Action plan
Principles of SG11 cooperation among other SGs
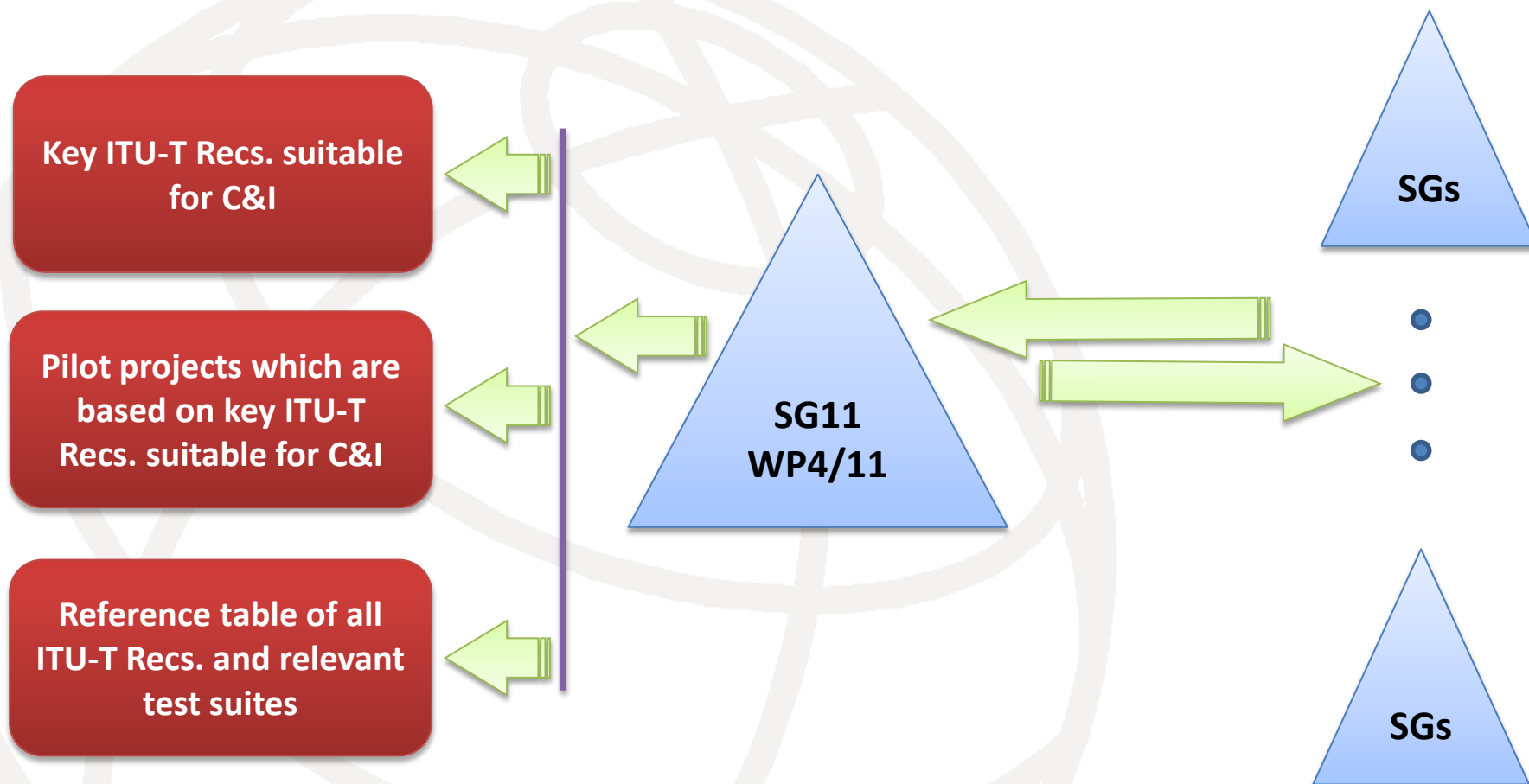
Key ITU-T Recs. suitable for C&I

Pilot projects which are based on key ITU-T Recs. suitable for C&I

Reference table of all ITU-T Recs. and relevant test suites

SG11 WP4/11

SGs

SGs

The list of key Technologies for C&I (1/2)

The living list of Recommendations and related specifications within key technologies suitable for C&I testing

ITU-T SG11 output document:

TD 371 (GEN/11) (9-16 July 2014)

#	Title	Focal Point	Other SDOs	ITU-T SGs	References to SDOs docs	References to ITU-T Recs.
1	NGN Functionality	Martin Brand Vice-chairman of SG11 (Austria) martin.brand@A1telekom.at	ETSI	SG11	ETSI (Requirements) - - -	ITU (Requirements) Y.2201 Y.2012 Q.3909
		Andrey Koucheryavy (Russia) akouch@mail.ru			ETSI (Test suites) - -	ITU (Test suites) Q.3900 Q.3901
		Dmitry Tarasov (Russia) tarasov@zniis.ru				
2	Functions of broadband network as a part of NGN	Dmitry Tarasov (Russia) tarasov@zniis.ru	-	SG11	-	ITU (Requirements) Y.2012
						ITU (Test suites) Q.3906.1
3	IMS architecture, signalling protocols, interfaces	Martin Brand Vice-chairman of SG11 (Austria) martin.brand@A1telekom.at	ETSI/3GPP	SG11	ETSI (Requirements) TS 124 228 TS 124 229 TS 124 238 TS 124 428	ITU (Requirements) - - - -

The list of key Technologies for C&I (2/2)

Network and equipment performance (benchmarking) – Req: Draft Q.39zz-1;   TS:Q.3930, Q.3931.1-4, Q.3932.1-4,

QoS/QOE/NP – Req: Q.3925, Y.1541, Y.1542, Y.1543, draft Q.MSPQuality, Q.NP-req; TS:Q.QMS, Q.3930, Q.3931.1, Q.3931.2

NGN Functionality – Req: Y.2201, Y.2012; TS: Q.3909; TS: Q.3900; Q.3901

Functions of broadband network as a part of NGN – Req: Y.2012; TS: Q.3906.1

IMS architecture, signaling protocols, interfaces – Req: Y.2012; TS: Q.3904

IMS basic call – Protocol conformance testing – Req: Draft Q.39xx-1; TS: Q.3904

IMS supplementary services. Protocol specifications – Req: -; TS: Q.3943.1/2/4, Q.3942.1

IMS interconnection – Re: Q.3401; TS: -

Interoperability testing – Req: - ; TS: Q.3940, Q.3941.1-4

NGN monitoring system – Req: Q.3902, Q.3910, Q.3911, Q.3912; TS: -

Interworking of signaling protocols of NGN – Req: Q.1912.5, Q.3401, Q.3402; TS: Q.1912.5 B-F

RFID – Req: - ; TS: Q.3950

Internet speed access – Req: - ; TS: Q.InSpMs

Internet Access as perceived by user – Req: G.1000; TS: -

The pilot projects of conformance testing against ITU-T Recommendations (1/2)

http://itu.int/go/pilot-projects

Title of planned/on going Pilot Project under C&I Programme	ITU-T Recs.	SGs focal point	Interested companies	Motivations	Short-term strategy
The title of planned or on-going Pilot Project which SG is going to start and maintain		The contact of responsible person/expert (rapporteur, editor, etc)	The companies are going or have already involved to the project	The reason and expecting results under ITU C&I Programme	The short-term strategy (one year) for achieving the goals of the Pilot Project

http://itu.int/go/pilot-projects

First ITU-T Pilot project

Testing scope: conformance testing of the Multi-technology network interface in accordance with series of Recs. ITU-T M.3170.x

Involved companies: China Telecom, FiberHome, ZTE, CTTL, BUPT, etc.

Goal: improvement of an interconnection between EMS, NMS, and OSS for the MTNM interface

Short-term strategy:

- ✓ harmonize requirements based on the inputs provided by vendors, labs, operators

- ✓ select an appropriate TL that has a competence to perform the relevant tests

- ✓ perform testing at the appointed TL

- ✓ populate ITU product conformity DB

Reference Table is a list of ITU-T Recs and applicable test suites (ITU/other SDOs) which indicate relevant parameters to be tested for conformity/interoperability

Testing Laboratories recognition procedure (1/2)

Background: Most SDOs/Forums/Consortia established its own TL's recognition procedure. This approach helps them to ensure the credibility of their C&I Programmes. TSB developed an [overview](#) on a best practice (GSMA, Continua, IECEE).

Goal: the aim of the ITU recognition procedure is to allow TL to be recognized as a laboratory with a competence to perform tests against ITU-T Recommendations.
First draft of the Recognition procedure was proposed by Russia ([C97](#))

Recognition procedure defines:
- ✓ Requirements for TL
- ✓ Requirements for ITU-T assessors
- ✓ Relevant procedure to apply for the ITU recognition

Conformance Assessment Steering Committee (CASC) is an instrument to follow up the recognition procedure
ITU-T SG11 established the CG aiming to clarify this issue

Correspondence group on collaboration between ITU and TLs
- ✓ Chairman: Mr Isaac Boateng (vice-chairman of SG11)
- ✓ CG documents: http://ifa.itu.int/t/2013/sg11/exchange/wp4/q11/
- ✓ Last meetings: 20 Feb, 10 April, 14 May, 11 June, 2 July and 10 July 2014
- ✓ Key outcomes: revised recognition procedure and best practice

The recognition procedure of TL
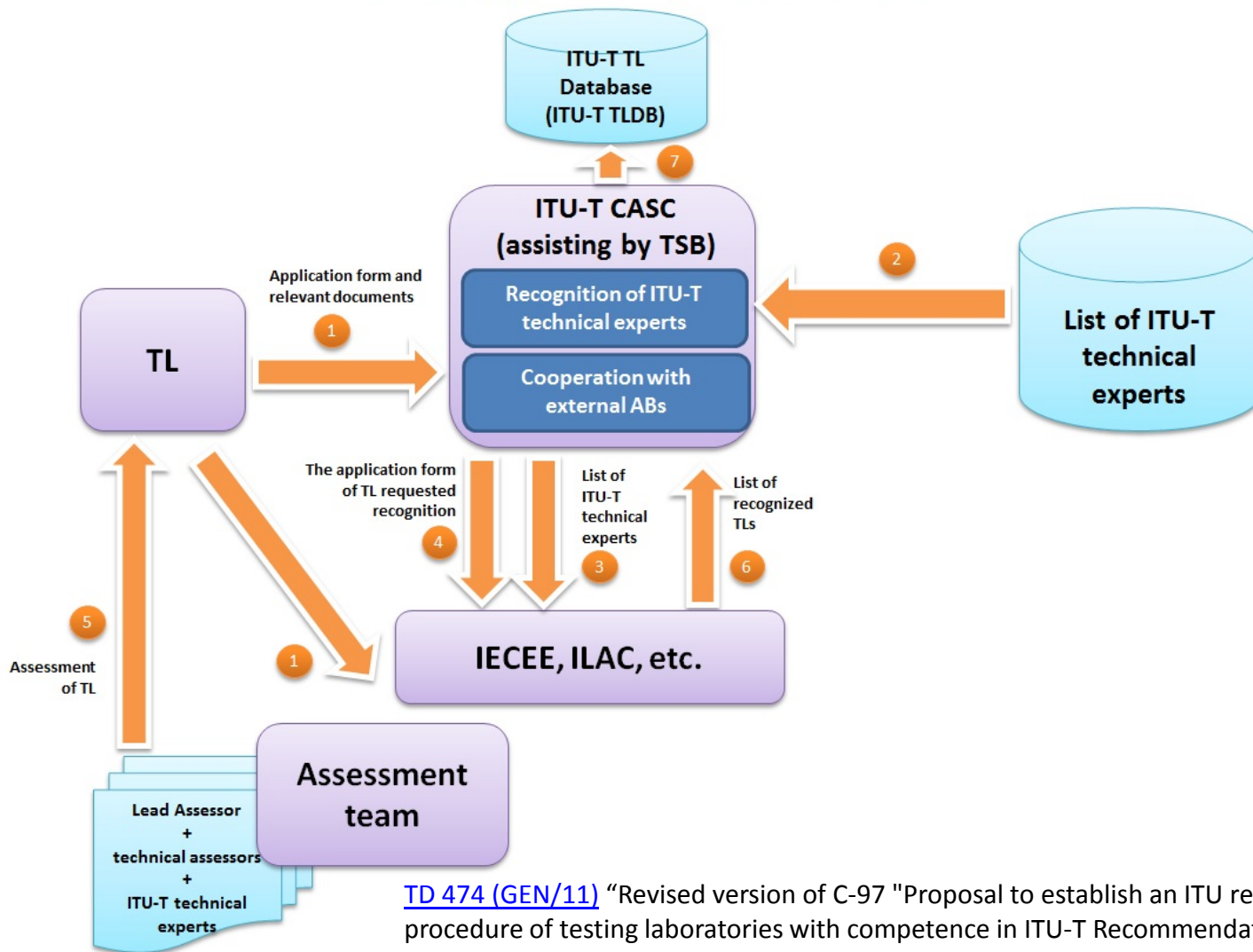
TD 474 (GEN/11) "Revised version of C-97 "Proposal to establish an ITU recognition procedure of testing laboratories with competence in ITU-T Recommendations", 9-16 July 2014

Performance assessment of mobile phones in conjunction with vehicle's HFT in accordance with Recs. ITU-T P.1100/P.1110 www.itu.int/go/test-event

Background

Many mobile phones do not work properly with HFT's system and thereby significantly degrading the speech quality of the complete system

Findings

- ✓ an incorrect behavior of the mobile phone in the wireless connection to a vehicle's HFT
- ✓ an unacceptable quality of a voice-call inside the car and outside the car for the conversational partner

Only 30 % of phones passed the tests

Key outcomes

- ✓ New web portal describing the existing issues
- ✓ A "white list" of mobile phones recommended by major car manufactures
- ✓ Updated Recs. ITU-T P.1100/P.1110 with the new values of performance

Venue: ITU Headquarters
TL: HEAD Acoustics
Date: 12-16 May 2014
Participants: Mercedes-Benz, Volvo, Bosch, Toyota
Number of tests: 40 (30 phones)
ITU press-release

Internet speed quality measurement (1/3)

The key reasons for establishing the global approach:

- **Internet services are playing the important role in our life (social networks, OTT, etc.)**

- **Quality of Internet services becomes a such vexed issue (subscriber loyalty)**

- **Fixed and Mobile operators are playing the significant role in Internet community**

- **Customer is looking for the best offer of Internet access "speed/tariff"**

Internet speed quality measurement (2/3)

The key issues of the existing Internet speed measurement systems:

- The existing algorithms are not suitable for operators/regulators to manage customer's SLA

- The method is not standardized by International SDO. There is no reliable mechanism for Internet speed checking

- The existing measurement systems do not provide guarantee that testing results related to operator's network (no guarantee that the measurement connection does not include the Internet segments)

Internet speed quality measurement (3/3)

ITU-T SG11 Q15/11 "Testing as a service TAAS" established the new work item

Q.Int_speed_test "Unified methodology of Internet speed quality measurement usable by end-users on the fixed and mobile networks"
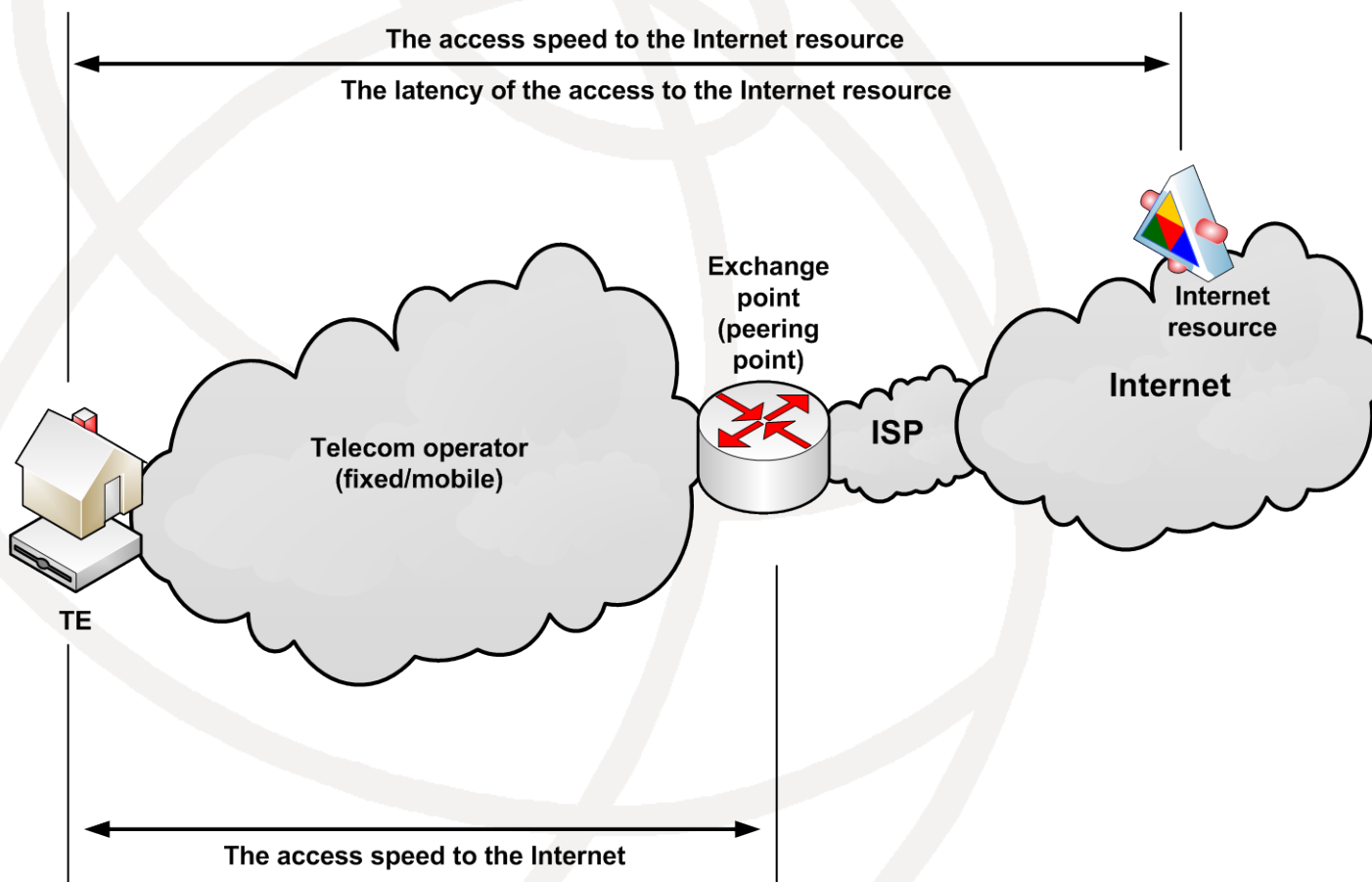
Who is invited to join the ITU C&I Programme (1/2)

- ITU-T SG11 invites TLs/SDOs/Consortia to launch the pilot projects on the conformity testing against ITU-T Recs. TSB can help to conduct these events

- TSB invites ICT Companies (e.g. vendors, operators, etc.) to launch the interoperability events based on the ITU-T Recs.

- ITU-T SG11 invites companies to develop Test specifications against ITU-T Recs. Other contributions and proposals which are relevant to C&I issues are highly appreciated

Who is invited to join the ITU C&I Programme (2/2)

- ITU-T SG11 invites TLs and all interested parties to participate in CG for discussing the ITU TL's recognition procedure

- TSB invites Vendors and TL to populate the ITU Product Conformity Database

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Interoperability: interop@itu.int
JCA-CIT: tsbjcacit@itu.int

Background slides

ITU web sources related to C&I Programme

ITU C&I resources

C&I Portal - http://www.itu.int/en/ITU-T/C-I/Pages/default.aspx

JCA-CIT - http://www.itu.int/en/ITU-T/jca/cit/Pages/default.aspx

SG11 (lead group on testing) - http://www.itu.int/en/ITU-T/studygroups/2013-2016/11/Pages/default.aspx

Living lists on the ITU-T C&I Portal (1/3)

http://itu.int/go/key-technologies

The living list of Recommendations and related specifications within key technologies suitable for C&I testing

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ITU-T SGs outputs:

Living List of key technologies to be tested on C&I (SG11 output, 25 February - 1 March 2013)

JCA-CIT updates (25 April 2013)

#	Title	Focal Point	Other SDOs	ITU-T SGs	References to SDOs docs	References to ITU-T Recs.
1	**Network and equipment performance (Benchmarking)**	Martin Brand Vice-chairman of SG11 (Austria) martin.brand@A1telekom.at	**ETSI** (INT; STQ; MTS)	**SG11**	**ETSI (Requirements)** DTR/STQ-207 (draft)	**ITU (Requirements)** Draft Q.39zz-1
		Michael Mild Rapporteur of Q10/11 (Sweden) michael.mild@softwell.se			**ETSI (Test suites)** ETSI TR 101 577 TS 186 025-1 TS 186 025-2 TS 186 025-3 TS 186 025-4 TS 186 008-1 TS 186 008-2 TS 186 008-3 TS 186 008-4	**ITU (Test suites)** Q.3930 Q.3931.1 Q.3931.2 Q.3931.3 (draft) Q.3931.4 (draft) Q.3932.1 (draft) Q.3932.2 (draft) Q.3932.3 (draft) Q.3932.4 (draft)
2	QoS/QoE and NP	Martin Brand Vice-chairman of SG11 (Austria) martin.brand@A1telekom.at Eva Ibarrola (Spain) eva.ibarrola@ehu.es Minrui Shi (China)	**ETSI**	**SG12** **SG11**	**ETSI (Requirements)** - - - TR 102 775 TS 101 563 TS 102 928 (draft) - -	**ITU (Requirements)** Q.3925 Y.1542 Y.1543 Y.1541 Y.1541 - Q.MSPQuality Q.NP-req

List of Pilot projects for conformity assessment against ITU-T Recs

YOU ARE HERE   HOME   > ITU-T   > ITU CONFORMITY AND INTEROPERABILITY   SHARE

#	Title	ITU-T Recs.	Focal Point	Interested Companies	Motivations	Short-term strategy
1	Conformance testing pilot project on "Network management interface related Recommendations (ITU-T M.3170 series)"	Recs. ITU-T M.3170 series (M.3170.0, M.3170.1, M.3170.2, M.3170.3)	WANG Zhili (WP2/2 chair)	**Network Operators** • China Telecom Co., Ltd. • China Southern Power Grid (China) **Vendors** • FiberHome (China) • ZTE (China) **Integrators** • Beijing Metarnet Technologies Co., Ltd. (China) **Testing Labs** • Beijing Infotel Network Testing Laboratory (China) • China Telecommunication Technology Labs (CTTL) **University** • Beijing University of Posts and Telecommunications (BUPT, China)	Taking into account of the wide adoption and influence in industrial of this series of Recommendations, this Conformance testing project will promote products which are compliant to this series of Recommendations, help operators, vendors, and integrators to implement this series of ITU-T Recommendations and better facilitate the interconnection between EMS, NMS, and OSS for the MTNM interface.	**First** — gather interested vendors, operators, integrators and others who implement Recs. ITU-T M.3170 series to identify and harmonize their testing requirements. **Second** — select appropriate testing organization(s) that are competent to perform the conformance testing for the Recs. ITU-T M.3170 series against these testing requirements using agreed test suites. **Third** — testing organization(s) to test the products which are based on the Recs. ITU-T M.3170 series by agreed test suites (see 1st above). **Fourth** — populate the ITU-T product conformance database with testing results generated by selected testing organizations which performed testing, and produced conformance testing report in agreed format.

Living lists on the ITU-T C&I Portal (3/3)

http://itu.int/go/reference-table

The reference table of standards are used for C&I assessment

YOU ARE HERE   HOME   > ITU-T   > ITU CONFORMITY AND INTEROPERABILITY   SHARE

The living list of technologies to be tested on C&I

List of Pilot projects for conformity assessment against ITU-T Recs

The reference table of standards are used for C&I assessment

SG11 Action plan on C&I

ITU-T meeting schedules on C&I activities

Resolution 76 of WTSA-12 resolves that "conformance and interoperability testing requirements shall provide for verification of the parameters defined in the current and future ITU-T Recommendations as determined by the Study Groups developing the Recommendations, and for interoperability testing to ensure interoperability taking into account user needs and in consideration of the market demand, as appropriate".

The C&I Action Plan agreed by Council-12 requests "ITU-T study groups to identify further technologies for which there is a market demand for a conformity assessment programme and to identify whether test specifications are available and if not, to explore the provision of test specifications. If test specifications are available, they may be turned into e.g. ITU-T Recommendations or supplements".

Following the WTSA-12 and Council-12 decisions, SG11 established the SG11 Action plan for implementation of C&I Programme which will help to achieve the goals of Resolution 76 (WTSA-12) and will assist ITU-T SGs in their work concerning the development of ITU C&I Programme within their responsibilities. The Action plan also is aimed at helping developing countries in the implementation of their C&I plans in the regions.

The one of the most important part of the SG11 Action plan is a Reference Table showing list of ITU-T Recs and relevant parameters to be tested for conformity/interoperability and references to the applicable test suites (ITU/other SDOs). These information will be used for filling out the ITU conformity Database by results of conformity assessment against ITU Recs.

The Reference Table is maintained by TSB in accordance with information provided by all ITU-T SGs and JCA-CIT on the SG11 requests with the template is provided in Annex B of SG11 Action plan.

QUICK LINKS

- C&I Portal home page
- ITU C&I databases
- Guidances and information on C&I
- JCA-CIT
- BDT C&I Activities
- ITU Promotional materials
- TSB Circular 98
- ITU-T SG11 (lead group on testing)

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ITU C&I Programme. Key activities and main ITU outcomes which are related to the implementation of ITU C&I Programme